Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-75. (canceled)

76. (currently amended) A communication system for communicating between the surface and uderground areas of the earth where amount of energy used for communications is limited, comprising:

a modulator for modulating a single sideband carrier signal;

a first amplifier coupled to the modulator to amplify signals received from the modulator; ~~and~~

an antenna coupled to the first amplifier to receive amplified signals from the first amplifier, the antenna being tuned to receive or transmit or receive and transmit low signal levels, ~~with a series capacitor to reduce impedance~~ the antenna being coupled ~~magnetic flux linkage~~ to a second antenna by Faraday coupling for communicating to a second system ~~coupled to~~ that includes the second antenna, wherein low energy input into the antenna is communicated to the second system via the second antenna;

a microprocessor operable at least to filter noise spike from received signals using half-wave averaging and median filtering;

a comb filter module coupled to the microprocessor, the comb filter module operable to attenuate one or more harmonics that induce noise in the received signals;

a demodulator coupled to the comb filter, the demodulator operable to recover signals; and

a switch operable to couple and decouple the antenna from a receiving terminal and a transmitting terminal,

wherein through-the-earth communication is enabled.

77-78. (canceled)

79. (previously presented) The communication system as claimed in claim 78, further including:

a second amplifier coupled to the single sideband modulator,

wherein the second amplifier receives signals representing voice input and transmits the signals to the single sideband modulator.

80. (previously presented) The communication system as claimed in claim 79, wherein the second amplifier includes an automatic gain control amplifier.

81. (previously presented) The communication system as claimed in claim 79, wherein the second amplifier includes an analog gain control amplifier.

82. (previously presented) The communicatin system as claimed in claim 79, wherein the second amplifier includes a digital gain controller.

83. (previously presented) The communication system as claimed in claim 76, wherein the modulator includes a digital signal processor.

84. (previously presented) The communication system as claimed in claim 76, wherein the first amplifier includes:

a preamplifier to receive signal from the single sideband modulator; and

a power bridge amplifier coupled to the preamplifier and the antenna, wherein the power bridge amplifier receives the signal amplified by the preamplifier and applies the signal to the antenna with current.

85. (previously presented) The communication system as claimed in claim 76, wherein the modulator includes a frequency-shift-keying modulator.

86. (previously presented) The communication system as claimed in claim 76, wherein the modulator includes a phase-shift-keying modulator.

87. (previously presented) The communication system as claimed in claim 76, wherein the modulator includes a quadrature phase-shift-keying modulator.

88. (currently amended) The communication system as claimed in claim 76, further including a filter coupled to the microprocessor ~~modulator~~, wherein the signal is filtered to be within a predetermined range.

89. (previously presented) The communication system as claimed in claim 88, wherein the filter is a passive filter.

90. (previously presented) The communication system as claimed in claim 89, further including an active filter coupled to the passive filter.

91. (canceled)

92. (currently amended) The communication system as claimed in claim 76, ~~further~~ wherein the comb filter module includes ~~including~~ a tracking comb filter coupled to the modulator, the tracking comb filter enabled to track drifting noise of selected frequency and their harmonics.

93. (currently amended) The communication system as claimed in claim 76, further including a relay coupled to the antenna, the rely enabled to connect and disconnect the antenna from coupling with a receiving terminal and a transmitting terminal ~~the signal processor~~.

94. (currently amended) The communication system as claimed in claim 93, ~~further including a~~ wherein the switch is coupled to the relay to control the relay.

95. (previously presented) The communication system as claimed in claim 76, further including a relay coupled to the antenna, the relay enabled to connect and disconnect the antenna from coupling with the first amplifier.

96 (new) The communication system of claim 76 wherein the antenna is tuned with a series capacitor to reduce impedance.

97 (new) The communication system of claim 76, wherien power input into the antenna is kept low.

98. (new) A through-the-earth communication system for communicating between the surface and udergrounds areas of the earth where amount of energy used for communications is limited, comprising:

a transmitting unit comprising at least:

a first microprocessor for at least modulating signals;

a first amplifier coupled to the modulator to amplify the signals received from the modulator; and

a first loop antenna coupled to the first amplifier and being tuned to low frequencies and enabled to transmit the signals to a receiving antenna by faraday coupling;

a receiving unit comprising at least:

a second loop antenna operable to receive signals by faraday coupling;

a second microprocessor coupled to the second loop antenna operable to filter received signals using half-wave averaging and median filtering for removing noise spike in the received signals,

a comb filter module coupled to the second microprocessor, the comb filter module operable to track and attenuate one or more harmonics that induce noise in the received signals; and

a demodulator coupled to the comb filter, the demodulator operable to recover signal;

and

a switch operable to couple and decouple the first and second antennas from the receiving unit and the transmitting unit.

99. (new) A through-the-earth communication system for communicating between the surface and uderground areas of the earth where amount of energy used for communications is limited, comprising:

a transmitting unit comprising at least:

a first microprocessor for at least modulating signals;

a first amplifier coupled to the modulator to amplify the signals received from the modulator; and

a first loop antenna coupled to the first amplifier and being tuned to low frequencies and enabled to transmit the signals to a receiving antenna by faraday coupling;

a receiving unit comprising at least:

a second microprocessor coupled to the second loop antenna operable to filter received signals using half-wave averaging and median filtering for removing noise spike in the received signals,

a comb filter module coupled to the second microprocessor, the comb filter module operable to attenuate one or more harmonics that induce noise in the received signals; and

a demodulator coupled to the comb filter, the demodulator operable to recover signals;

a loop antenna coupled to the first amplifier and being tuned to low frequencies and enabled to transmit the signals to a receiving antenna by faraday coupling, the loop antenna further operable to receive signals by faraday coupling; and

a switch operable to couple and decouple the loop antenna from the receiving unit and the transmitting unit.

100. (new) The system of claim 98, wherein the first microprocessor includes a single side band modulator.

101. (new) The system of claim 99, wherein the first microprocessor includes a single side band modulator.

102. (new) The system of claim 98, wherein the comb filter module includes tracking comb filter.

103. (new) The system of clim 99, wherein the comb filter module includes tracking comb filter.

104 (new) A method of communicating through-the-earth where amount of energy used for communications is limited, comprising:

amplifying received signals;

modulating the signals to low frequency single side band signals;

applying the single side band signals to a loop antenna;

transmitting the low frequency single side band signals via the loop antenna using faraday coupling.

105. (new) A method of communicating through-the-earth where amount of energy used for communications is limited, comprising:

receiving low frequency single side band signals via the loop antenna using faraday coupling;

applying the low frequency single side band signals to a filter and removing noise;

limiting voltage of the noise filtered low frequency single side band signals;

attenuating harmonics in the low frequency single side band signals for allowing signals to be detected;

half-wave averaging and median filtering the low frequency single side band signals; and

demodulating the low frequency single side band signals to recover signals.